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Letter Ruling 10-4: Sales Tax Exemption for Anaerobic Digestion Systems

August 13, 2010

Dear:

You request a letter ruling on the application of the Massachusetts sales tax, G.L. c. 64H, to purchases by ***** (Taxpayer) of five “complete mix anaerobic digestion systems” (Digesters) from ***** (Vendor) for use on dairy farms located in Massachusetts. In particular, you ask whether the purchase of the Digesters by Taxpayer are exempt from Massachusetts sales tax under G.L. c. 64H, 6(s) as “equipment used directly and exclusively in agricultural operations.” In support of your request, you state the facts as follows:

FACTS

Taxpayer will purchase and install five turn-key Digesters from Vendor. These Digesters will be installed on five small dairy farms in Massachusetts. The five participating farms own 60% of Taxpayer, with the remaining 40% owned by an entity that manages the farms.

The Digesters will process dairy manure and recycled feedstock from food processing entities in order to produce methane gas from which electricity is generated for use on the farms; excess electricity not used on the farm is sold back to the power grid.^[1] Additionally, Taxpayer uses the Digesters to produce a fertilizer product that meets the Natural Resource Conservation Services standards for nutrient management and is licensed by the Massachusetts Department of Agricultural Resources for reuse on the farms. All five digesters will operate in the same manner, have the same inputs, produce the same outputs, and will be used for agricultural purposes.

The processes described above take place on land owned by dairy farmers. You have provided a letter from the Massachusetts Department of Agricultural Resources (MDAR) indicating that the above activities fall within the definition of “farming or agriculture” as defined in G.L. c. 128, § 1A.^[2] MDAR has further determined that the Digesters as designed and operated by Taxpayer are a “part of the agricultural operations of the farm business”.

You have provided documentation indicating the location of the equipment on the farms, the process for converting the dairy manure into energy that powers the farm, and a list of the actual equipment purchased in connection with the Digesters.

An anaerobic digester is a combination of agricultural equipment that involves many aspects dairy farm operation. It produces heat for farm buildings, electricity for buildings, outdoor lighting, and milking equipment, digested fiber for use as an animal bedding replacement, and recycled fertilizer for crop production - all while reducing the nuisance inherent in current manure handling and disposal practices.

According to the information you supplied, dairy farms generate significant amounts of organic material in the form of animal manure. This material is stored during the winter months and spread on fields as a fertilizer source during warmer months. By processing the manure in an anaerobic digester the pathogen load in the manure is reduced, and the weed seeds and other invasive

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organisms are de-activated, the odor and the viscosity of the manure is reduced (allowing it to be used in field sprayers and reducing blockage concerns).

An anaerobic digester takes organic material like manure and decomposes it in a controlled environment. The organic material is mixed and heated in a large sealed tank without the presence of oxygen (the 'anaerobic' part of the process) until the material is degraded into a stable product. It then leaves the anaerobic digester and is stored until it is used as a fertilizer. In contrast to composting - composting is a relatively dry process that requires constant aeration of the compost pile (adding oxygen), anaerobic digestion is more suited for wet material and requires the absence of oxygen.

The following is a simplified overall description of the process:

1.a Manure is pumped from a receiving pit into the biomass equalization tank.

1.b Source Separated Organics (SSOs) arrives on site in a tanker truck and is pumped into the biomass equalization tank. Without the SSO the manure alone would only produce around 40-50kW, compared to almost 300kW with SSO added. The SSO also represents a closed nutrient cycle - food products that remove nutrients from the soil are returned to the soil through anaerobic digestion and field application.

2. Manure and SSO are mixed, becoming 'digestate' and brought up to temperature in the biomass equalization tank.

3. Digestate is fed into the main digestion tank from the biomass equalization tank on an automated feeding schedule.

4. Digestate is continuously mixed and heated inside the digestion tank for approx. 30 days while microorganisms degrade the material.

5. During the digestion process the microorganisms in the tank produce a methane heavy gas called 'biogas'.

6. This biogas is collected at the top of the tank and combusted in a Combined Heat and Power unit to produce heat and power for digester operation and the farm.

7. Digestate, now stabilized, is pumped from the digestion tank and through a screw press to remove digested fiber (mostly fiber from the cow feed).

8. The remaining stabilized liquid exits the screw press and enters storage tanks to be spread as a recycled fertilizer during the growing season.

Issue

Are purchases of the Digesters by Taxpayer exempt from sales tax under G.L. c. 64H, §(s)?

RULING

For reasons discussed below, we rule that Taxpayer's purchases of the Digesters are exempt from sales tax under the clauses in G.L. c. 64H, § 6(s) exempting machinery used directly and exclusively in 1) agricultural production and 2) furnishing electricity when delivered to consumers through mains, lines, or pipes.

DISCUSSION

Massachusetts imposes a 6.25% sales tax on all retail sales in Massachusetts, unless such sales are exempt under a particular provision of law. G.L. c. 64H, § 2. The exemptions from sales tax are found in G.L. c. 64H, § 6. There are two exemption provisions that are potentially relevant to your inquiry.

Section 6(s) of chapter 64H exempts sales of machinery, or replacement parts thereof, used directly and exclusively in a number of activities, including, in pertinent part, "agricultural production" and "furnishing of...electricity . . . when delivered to consumers through mains, lines, or pipes." Since the Digesters perform two functions, each of which is potentially exempt under these clauses, we examine each provision separately, below. First, however, we must determine whether the Digesters qualify as "machinery".

1. "Machinery"

The Massachusetts Supreme Judicial Court defines "machinery" as "any combination of mechanical means designed to work together so as to effect a given end." *Warner Amex Cable v. Board of Assessors*, 396 Mass. 239, 242 (1985). For purposes of the § 6(s) exemption, the Appellate Tax Board has also defined "machinery" as:

A mechanical, electrical or electronic device designed to be used and which is used in manufacturing, converting or processing tangible personal property to be sold. It includes not only the basic unit but also any adjunct or attachment necessary for the basic unit to accomplish its intended function. It also includes all devices used or required to control, regulate or operate a piece of machinery, provided such devices are directly connected with or are an integral part of the machinery and are used exclusively for the purposes mentioned.

Western Electric Co., Inc. v. Commissioner of Revenue, A.T.B. Docket No. 113779 (1984).

The Commissioner recently issued a letter ruling addressing the "machinery" requirement of this exemption. In Letter Ruling 10-3 (Machinery Used to Construct a Wind Turbine), we ruled that a wind turbine qualified as "machinery" used directly and exclusively in the furnishing of electricity to consumers through mains, lines or pipes. We further concluded that the tower, its components and supporting foundation also qualified for exemption as machinery since they were either adjuncts or attachments necessary for the wind turbine to accomplish its intended function or, alternatively, were used to control, regulate or operate the wind turbine. With respect to any other machinery required to build the wind turbine, tower or foundation, we ruled that such machinery was exempt only if it becomes a part of the integrated and synchronized system that furnishes the electricity to consumers.

Similarly, in examining the items at issue here, all of the items comprising the Digester system are either adjuncts or attachments necessary for the system to accomplish its intended functions, or, alternatively, are used to control, regulate or operate the system. Accordingly, they collectively fall within the definition of "machinery" under the rationale discussed above.

2. "Used directly and exclusively in agricultural production"

In order for the Digesters to fall within the "agricultural production" clause of the § 6(s) exemption, they must qualify as [1] machinery [2] used directly and exclusively in .

. . . [3] agricultural production.

The Commissioner has issued a number of public written statements interpreting the phrase "agricultural production". See, e.g., DD 99-8 (Cranberry Growers: Sales and Use Tax on Equipment Used in Production); DD 92-2 (Farm Machinery Used in Agricultural Production); Letter Ruling 81-62 (Materials and Machinery Used in Agricultural Production).^[3]

In DD 92-2, the Commissioner interpreted the phrase "directly and exclusively in agricultural production" to include the preparation of land for cultivation, harvesting, and storage, and all the intermediate steps of growing crops and raising livestock. We further stated that "agricultural production" also encompasses certain incidental agricultural operations, including the storage of crops and preparation for market, to the extent that such storage and preparation activities occur on the agricultural premises.

In DD 99-8, we pointed out that the term "used directly," in G.L. c. 64H, § 6(r) and (s), also has no specialized meaning in the case law. The term is therefore also interpreted in accordance with its usual and natural meaning. *Commissioner of Revenue v. AMI Woodbroke, Inc.*, 418 Mass. 92, 95 (1994). The word "directly" is defined as "in a direct manner." "Direct" is "proceeding from one point to another in time or space without deviation or interruption: straight; characterized by close logical, causal, or consequential relationship." DD 99-8, citing Webster's Ninth New Collegiate Dictionary, 358 (1987). The term "used directly" is thus a use without an intervening step. *Id.*

In Letter Ruling 81-62, the Commissioner examined the taxability of the components of a livestock feeding and somewhat analogous manure-handling system, and whether leases of the components of the systems were exempt from sales tax under the "agricultural production" clauses of G.L. c. 64H, § 6(s). The system at issue was a livestock-feeding system which included a top-filling, bottom-unloading silo in which feed for livestock was stored in an oxygen-limited atmosphere to prevent spoilage and preserve nutritional value, together with equipment for loading and unloading the silage and for feeding livestock. The manure-handling system comprised equipment for collecting and blending manure so that it could be stored in a condition that limits loss of nutrients, a storage structure, equipment for transferring the liquid manure to and from the structure, and equipment for spreading the manure on or injecting it into the soil as fertilizer for growing crops. With

the exception of the bases upon which the silos and manure-storage structures were built, the systems were designed to be movable from location to location as desired; each system was removed at the end of the lease term by the lessor, unless the lessee purchased the system at its fair market value at the termination of the lease.

Under those facts, the Commissioner ruled that leases of the components of the livestock-feeding and manure-handling systems constituting machinery were exempt from the sales tax under the "agricultural production" clause of G.L. c. 64H, § 6(s), and that leases of the components constituting materials were exempt from the sales tax under G.L. c. 64H, § 6(r) if their normal useful life is less than one year or if the lease payments are allowable as an ordinary and necessary business expense for federal income tax purposes.

In evaluating the Digesters' function relating to the blending and production of a fertilizer product for reuse on the farm, we conclude that this function is akin to the manure handling system at issue in Letter Ruling 81-62. As in Letter Ruling 81-62, we determine that this function likewise falls within the definition of "agricultural production" within the meaning of G.L. c. 64H, § 6(s). If the Digesters were used directly and exclusively in this process, they would be exempt.

As noted above, the Digesters are not used solely in this manner. They also process dairy manure and recycled feedstock into methane gas, which, in turn, is used to generate electricity for use on the farm. The Commissioner has not ruled on whether this process falls within the definition of "agricultural production" under G.L. c. 64H, § 6(s). If it does not, the Digesters cannot be said to be used exclusively in that particular exempt activity. We observe, however, that the use of the Digesters in performing this activity may be exempt under a separate clause in section 6(s) exempting machinery... used directly and exclusively in ". . . furnishing . . . electricity when delivered to consumers through mains, lines, or pipes" (the "furnishing electricity" clause). We now examine this clause in further detail.

3. The "furnishing electricity" clause

The Commissioner has previously examined the "furnishing electricity" clause in a number of Letter Rulings. See, e.g., Letter Rulings 84-85 (Waste Processing Plant); 05-2 (Water Desalination Plant); 10-3 (Machinery Used to Construct a Wind Turbine). In Letter Ruling 84-85, the Commissioner examined whether a contractor's purchase of certain items that were incorporated into or used in connection with a waste-processing plant and a steam and electricity generating plant were subject to tax. The Commissioner concluded that purchases of ancillary and miscellaneous equipment were exempt "provided that such equipment was an adjunct or attachment necessary for the exempt machinery to accomplish its intended function, or a device used or required to control, regulate or operate exempt machinery and directly connected with or an integral part of such machinery." *Id.* On the other hand, the contractor's purchases of an oil tank and the building materials from which a receiving shed and the enclosure for a boiler were to be built (including the structural steel and supports) were subject to the sales or use tax.

In Letter Ruling 05-2, the Commissioner ruled that exemptions in G.L. c. 64H, §§ 6(r) and (s) for materials, tools, fuel, machinery and replacement parts in the context of furnishing water extend to all items that operate harmoniously to make an integrated and synchronized system. *Id.*, citing *Lowell Gas Co. v. Commissioner of Corporations and Taxation*, 377 Mass. 255, 260 (1979). There, the Court held that pipes, meters, production, storage and pressure regulating equipment were all integral components required in the company's system, and were all exempt from sales and use tax as machinery used directly and exclusively in the furnishing of gas. The Court also held that certain "meter installations" (structures of wood and metal which supported a gas meter or by means of which a gas meter is attached to a wall) were included in the definition of machinery used in furnishing gas to consumers.

In evaluating the part of G.L. c. 64H, § 6(r), (s) that exempts items that "are consumed and used directly and exclusively in the furnishing of gas, water, steam or electricity when delivered to consumers through main, lines or pipes. . . .", we also noted in Letter Ruling 05-2 that this part of the exemption is less restrictive than the exemption for items used "in an industrial plant in the actual manufacture of tangible personal property to be sold." Compare *Lowell Gas Co. v. Commissioner of Corporations and Taxations*, 377 Mass. 255, 259 (1979) (finding that the furnishing of gas denotes operations that are distinct from such terms as "manufacturing" and "production", used elsewhere in the same exemptions; the term "furnishing" includes the distribution function) with *Associated Testing Laboratories, Inc. v. Commissioner of Revenue*, 429 Mass. 628, 630 (1999) (delineating the five elements of the "manufacturing" piece

of the exemption, including that the exempt items must be used in actual manufacture, conversion, or processing). In the case at hand, the Taxpayer qualifies for the exemption because a portion of the electricity generated is sold to the power grid which delivers it to consumers other than the

Taxpayer.

CONCLUSION

Under the facts presented, the Digesters are not used exclusively in either furnishing electricity or in agricultural production. Rather, they perform two functions, each of which is independently exempt under two separate clauses of sections 6(s). This does not alter the fact that they are used directly and exclusively only in activities that are exempt by statute.

The Commissioner has the general authority to interpret the taxing statutes. G.L. c. 62C, § 3; DD 99-2. Under this general authority and under the rationale of the authorities cited above, we conclude that the Digesters qualify as machinery used directly and exclusively in activities that are exempt under G.L. c. 64H, § 6(r) and (s). Accordingly, Taxpayer's purchases of the Digesters are exempt from sales tax.

Very truly yours,

/s/ Navjeet K. Bal

Commissioner of Revenue

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[1] Under the Massachusetts Green Communities Act, the farm receives a credit for any power over the amount used on the farm. These credits can then be used by other rate payers inside the load zone to pay for their utility bills, up to 2MW of power generated on an agricultural property.

[2] The Commissioner has expressly declined to adopt the definitions of "farming or agriculture" found G.L. c. 128, § 1A for purposes of applying sales tax exemptions applicable to "agricultural production", as defined in G.L. c. 64H, §§ 6(r) and (s). See, e.g., DOR Directive 92-2 (Farm Machinery Used in Agricultural Production).

[3] A host of statutes define terms similar to "agricultural production." Among them are: G.L. c. 40A, § 3, the zoning enabling statute; G.L. c. 40L, § 1, defining "agricultural land," as part of the Agricultural Incentive Areas Act; G.L. c. 61A, which deals with the assessment and taxation of agricultural and horticultural land; G.L. c. 111, the chapter on Public Health; G.L. c. 128, § 1A, which regulates farming; G.L. c. 150A, § 5A, defining "agriculture," in the Labor Relations chapter.